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Twelve Ways to Turn Down High Energy Bills

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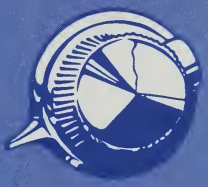
Twelve Ways to Turn Down High Energy Bills



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THE CONSERVATION CAUSE

Most Americans are well aware of the current energy crisis. Energy shortages and higher prices for the energy that is available have given all of us cause to conserve energy. And for most of us, the large increase in the cost of the energy we use has brought the crisis to a personal level—the money to pay for this increase comes directly out of OUR pockets.

Expensive energy-saving suggestions, especially for homes, have received much of the publicity for the past several years. Coupled with the fact that the best, low-cost suggestions often get lost in lists of less lucrative ideas, you may have been unaware of or overlooked a number of low-cost, or even free, energy-saving measures that can effectively lower your power bills.

The Montana Department of Natural Resources and Conservation prepared this booklet to remedy that situation. In it are presented twelve measures, or actions, that will cost you little or nothing to implement, but should help conserve energy in your home. We gave these measures special billing because they seem to offer the greatest savings for the least amount of time and money. In fact, about half of these measures will cost you nothing, except a little time. And all of them can be carried out with an investment of $100 or less, some of which can be recouped through the 15 percent federal Residential Energy Tax Credit and the 5 percent state Energy Conservation Tax Credit.

Despite the small investment, the savings you will realize from these measures may be impressive. By following all of them, or at least those that may apply to your home, we believe you can save around 25 percent on your fuel oil, natural gas, and electricity bills. At current energy prices, these suggestions could put from $50 to $250 a year back into your pocket if you own a typical home.*

Even if you are planning to insulate your home, add storm windows, or make other major energy-

saving purchases, we think you should take these twelve steps first. The measures suggested are cost-effective, they offer short paybacks, and, in many cases, they will save you even more when you carry out your original plans.

So get with it! By implementing the measures suggested and joining the conservation cause, you will not only be helping all of us save energy—you will be saving yourself some hard-earned cash. And what could be a better incentive?

*Due to escalating fuel costs, your total energy bill will probably go up this year. However, if you follow these low-cost or no-cost suggestions, your bill could be reduced by 25 percent. Savings in this booklet are based on costs of $.03 per kWh for electricity, $4.60 per mcf for natural gas, and $1.10 per gallon for home heating oil. If your costs are higher, your savings will be too.

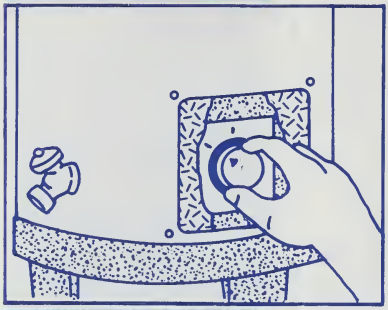
GETTING OUT OF HOT WATER

Actions 1 through 4 deal with hot water. Water heating leads the list of low-cost, energy-saving opportunities, both because it is a very expensive commodity and because its costs can be easily and inexpensively reduced by up to 50 percent if you implement the following suggestions.

To give you an idea of the savings you might expect, consider this: A family of four uses about 65 gallons of hot water a day. If their water is heated electrically, it now costs in the range of $120 to $180 a year to heat that water. If it is heated with natural gas, their annual hot water bill is more likely $125 a year. A 50 percent savings on water heating could mean $60 to $90 back in the family coffer.

1. How Low Can You Go?

The first action will cost you nothing and will likely lead to a marked decrease in your annual utility bills.



If the thermostat on your water heater is set between 140° and 160°F, you can lower the setting to between 110° and 120°F and save at least $25 a year with electric water heaters and $18 a year with gas heaters. If this change in thermostat setting produces spotty dishes in the automatic dishwasher, or if there isn't enough hot water for all your household needs, you can always turn the dials back up a little. The lower the settings you can live comfortably with, the more money you will save.

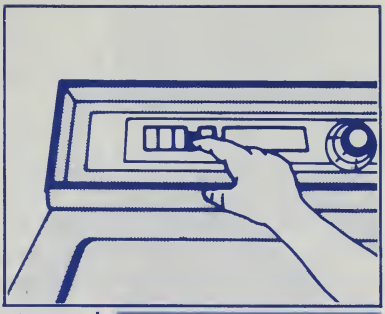
Anybody with a screwdriver and five minutes to spare can reset the water heater thermostat. At the front of most water heaters are one or two plates held on by screws. Turn off the circuit breaker (if you have an electric water heater) and remove the plates. Push back the insulation and you will see the thermostat. It will either have numerical settings or simply the designations "high," "medium," or "low." Reset the thermostat to 120°F or "low." After replacing the insulation and reinstalling the metal plates, turn the circuit breaker to its "on" position.

There is a myth that lowering the temperature of hot water only causes people to use more of it, and therefore, nothing is saved. The fact is, dialing down the thermostat saves money in two important ways: (1) it reduces the amount of costly hot water used in appliances like dishwashers, and (2) it keeps some of the heat from escaping through the walls of the water heater tank. These heat losses can be expensive. (See action #4.)

2. Cooling the Wash.

A switch to a lower temperature on the washing machine also can measurably reduce utility bills. It

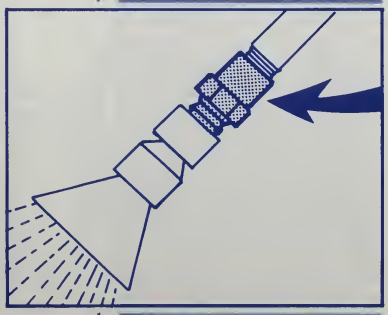
takes about 35 gallons of water to completely wash and rinse a full load of clothes, or about 17 gallons for each cycle. How much of that water is hot depends on which button you push. A hot wash and warm rinse combination, the highest setting on most machines, requires 25 gallons of hot water. Washing a load a day with such a setting could easily cost $60 a year with electric water heaters. Changing the rinse water to cold, which experts say does not affect washing results, will save 8 of those gallons per day, or $15 a year. By changing the wash setting from hot to warm, you could save another $15. If you use a gas water heater, the savings would be $10 a year for each action.



To increase the savings even further, use a cold water detergent, and wash and rinse with cold water. You may be very satisfied with the cleaning results.

3. How to Keep Your Shower From Washing Out Your Pocket.

Let's say that your family has a standard showerhead that releases from 5 to 6 gallons of water per minute. If two members of the family each take a five-minute shower each day, that's 50 to 60 gallons of water cascading down the drain. Roughly 40 percent of that water had to be heated. At this rate, your family will use 7,000 to 8,500 gallons of hot water per year from this showerhead alone. That will cost you $45 to $60 annually if your water is heated electrically, and $35 to $45 if your water is heated with gas.



You can get a hefty chunk of that money back, without taking cooler or shorter showers, by installing a flow controller. The flow controller, inserted between the showerhead and the shower arm, reduces the flow of water to 3 gallons per minute. Because the showerhead will continue to emit a good spray, you can enjoy a

comfortable shower and still wind up saving 1 gallon of hot water per minute, or up to 4,000 gallons of hot water per year. That's a savings of $25 a year for electric water heaters and $18 a year for gas water heaters. Either way, it's a decent return for less than $6 and a few minutes' effort.

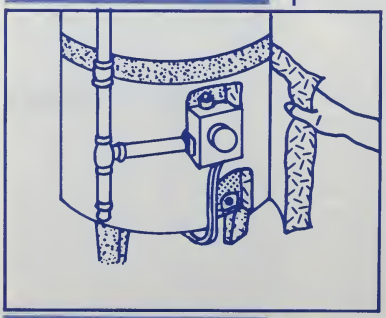
Most showerheads screw directly onto the arm of pipe that extends out from the wall and, thus, can be removed with a wrench. You might want to put a cloth around the area where the wrench is applied, so that the showerhead or shower arm is not damaged or scarred by the wrench. The showerhead should come off easily. If it doesn't, don't force it—too much pressure might twist, pinch, or break the shower arm.

Once the showerhead is removed, insert the flow controller between the showerhead and shower arm. If the joint leaks, try a little pipe joint compound on the threads.

With some ball-type fixtures, the showerhead can't be removed from the shower arm. Thus, flow controllers can't be easily installed.

4. Cutting Losses at the Tank.

Another way to save money is to add an extra layer of insulation around the outside of the hot water tank to cut heat loss. This effort can save about $11 a year for homeowners with electric water heaters, and about $7 a year for those with gas heaters. You can purchase a hot water heater wrap kit for about $12 or you can make your own wrap from a roll of foil-backed fiberglass insulation.



For this project, you will need enough insulation to completely encircle the tank and cover the top. The standard 3½-inch insulation is adequate for the job, although you may need to compress it a little to fit it between the tank and an adjacent wall.

The insulation goes around the tank like gift wrapping on a package—the shiny foil or white vinyl on the outside.

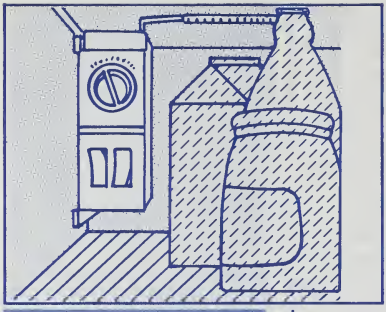
The main point is to cover all exposed surfaces of the tank, except for certain critical areas that must be left free to "breathe." On electric water heaters, it is best not to cover the drain faucet, the thermostat access panel, or the relief valve that comes out of the top of the hot water tank. On gas water heaters, a crucial warning must be heeded: **Do not cover air inlets, pipes, controls, relief valves, or the flue at the top of the heater.** It is also important that the insulation be affixed to the tank so that it can't slip down and cover the openings later. A mistake here could cause a fire or even an explosion.

TURN-OFFS, TURN-ONS AND TUNE-UPS

The next three suggestions deal with making appliances, furnaces, and windows do more work for less money. Your allies in this effort are switches, filters, thermostats, and even the rays of the sun.

5. Profitable Turn-offs.

Lights are the symbols of conservation because they can easily be turned off to save energy. There are, however, other "turn-offs" that can save you energy and money. One example is the antisweat heater in refrigerators that keeps moisture from collecting on the sides of the appliance. On large refrigerators, such heaters can add nearly $6 to the annual electric bill. These heaters can be regulated with a switch inside the refrigerator compartment. The switch may have a setting panel that says "dry/humid," or it may be called a "power-miser switch" or "energy-saver switch." If

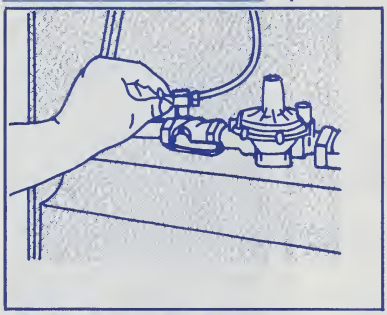


your switch says "dry/humid," make sure it is set on "dry." If it says "power-miser" or "energy-saver," turn the switch to "on" to turn the heaters off.

The heaters are usually unnecessary, except in humid climates where a house is not air-conditioned. If moisture ever does appear on the refrigerator, you can turn the heater on for a short interval and turn it off again when humidity decreases.

Other good turn-offs are:

(1) Turning off pilot lights on gas furnaces during the warmer months can save around $13 a year.



(2) If you have a second refrigerator and use it only to store seldom used items, unplug it for a savings of $12 to $24 a year.

(3) Central air conditioners can be turned off when the house will be unoccupied for four hours or more.

(4) Room air conditioners can be turned off when you leave the room for one hour or more.

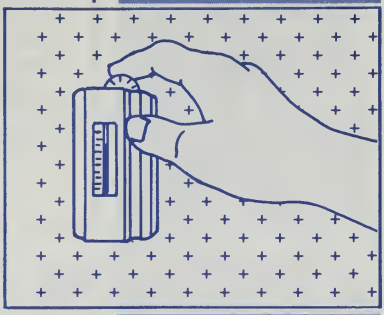
(5) Water heaters can be turned off when you leave the house for a weekend or longer.

(6) Furnace or heating system thermostats can be set back when you plan to be out of the house for more than four hours.

6. Keeping Your Heat and Your Cool.*

Many furnace technicians put the adjustment for the bonnet or plenum thermostat on oil- and gas-fired heaters at the top of their list of cost-effective, energy-saving measures. This thermostat turns off

the fan that forces warm air up through the duct system into the house. On most heaters, the thermostat is set at 120°F or higher, which results in lower furnace efficiency. By resetting the thermostat to just 5°F above room temperature, you can save about $9 a year.

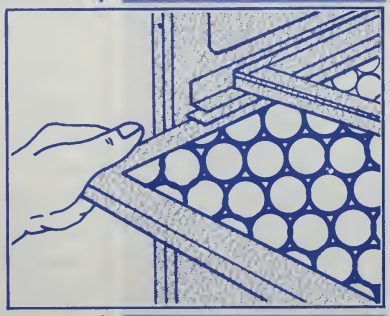


If you are unsure about the location of your bonnet thermostat, or how to adjust it, ask the person who services your furnace during its annual maintenance check.

Proper furnace maintenance is another great way to save money. Oil furnaces, especially, can waste a lot of fuel if they are not cleaned and tuned periodically. Due to excessive buildup of soot or maladjusted burners, furnace efficiency can drop from 75 percent to below 60 percent, and thereby increase fuel bills by more than one quarter. A furnace technician can perform a series of simple stack and burner tests to tell you just what your furnace's efficiency is and advise you on how to improve it.

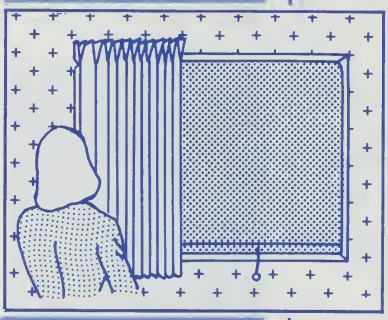
One part of the maintenance work you can do yourself is cleaning the filters. Clean filters are important in both furnaces and air conditioners. Clean or change them once a month.

Nevertheless, the best energy-saving adjustment on any furnace is still at the thermostat. Every degree that indoor temperatures are artificially maintained above or below outdoor temperatures adds to the home's fuel bill. Setting the thermostat back 10°F at night is a great



*CAUTION: Some older people may require higher indoor temperatures—above 65°F at all times—to avoid accidental hypothermia, a possibly fatal drop in body temperature. People with circulatory problems or those taking certain types of drugs (e.g. phenothiazines, commonly used to treat anxiety and nausea) may also be vulnerable to this condition. If you fall into either of these categories, you should follow your physician's advice on both winter and summer thermostat settings in your home.

way to save 5 to 15 percent on your heating bills while you sleep. The most inexpensive way to realize these savings is to manually turn down the thermostat at night and then turn it back up again in the morning. However, several thermostats on the market can perform this job automatically.



7. Savings on a Drawstring.

Every house is a solar collector. The problem is that the home may be collecting the sun's heat when you don't want it, and releasing that heat when you do.

In the winter, you can cut fuel bills by opening the shades in the morning on the eastern and southern sides of the house and closing them late in the day. If it is sunny in the afternoon, you can increase solar heating by opening the shades on the west side of the house.

Shades on the north-facing windows should stay drawn at all times during the winter.

STOPPING THE LEAKS

Both old and new homes have many cracks and openings to the outside, especially around windows and doors. These cracks are prime sources of heat loss through air leakage—warm air seeps out through cracks and is replaced by cold, outdoor air. A 1/8-inch crack around the perimeter of a standard front door is equivalent to a 4-by-7-inch hole in a wall. Air leakage can account for up to one-third of the heating costs in a properly insulated house.

8. Plugging the Holes.

Caulking should be used as a sealant whenever two different materials or parts of a house meet at a stationary joint.

Make an annual check of the following areas to determine where new caulking is needed:

- at exterior joints where window and door frames meet the siding
- between window and door drip caps and siding
- at corners formed by siding
- at sill joists where the wood structure meets the foundation
- between porches and the main body of the house
- around exterior openings like outside water faucets, electrical outlets, etc.
- where pipes and wires penetrate the ceiling below an unheated attic
- where basement windows are set into the block wall
- where the fireplace chimney meets the siding.

In general, check all outside areas where one part of a building meets another. Caulk all areas where a permanent, airtight seal is desired. Weatherstrip where surfaces must be moved, such as between a window sash and frame.

Materials

Caulking compound is generally available in two forms—in a preformed rope, or in cartridges to be used in a caulking gun.

Rope caulk is good for small jobs and costs about 35 cents per window. This type of caulk is especially convenient to use in hard to reach corners or where a temporary seal is desired. You simply unwind the rope and push the caulk into cracks with your fingers. Rope caulk is oil based and commonly will last one to two years. You also can buy tubes of caulk from which caulk is applied like toothpaste. Caulking tubes are often used for special jobs, such as around electrical outlets or faucets. Polyurethane caulk comes in a can and is applied as a foam that expands quickly and dries into a hard, durable seal. Although this type of caulk is difficult to apply, it usually lasts from 10 to 15 years. Other material fillers sometimes are used

in place of caulking to fill extra-wide cracks. Oakum, cotton caulk, or sponge rubber are common examples.

Caulk for use in caulking guns generally is available in 11-ounce cartridges. These cartridges hold enough caulk to draw a ¼-inch bead about 25 feet long.

USES AND PROPERTIES OF COMMON CAULKING MATERIA

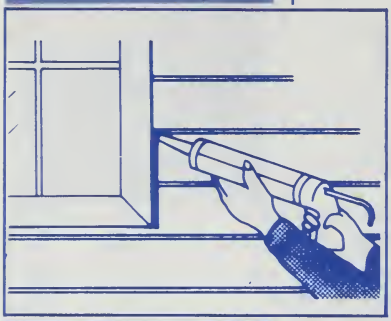
Base	Recommended Uses	Application
Silicone Polysulfide Polyurethane	Seals most dissimilar building materials (i.e., wood and stone, metal flashing and brick).	Generally easy to app Clean up immediately with dry cloth or mineral spirits.
Butyl rubber	Seals most dissimilar materials (glass, metal, plastic, wood, concrete). Seals around windows and flashing, or bonds loose shingles.	Difficult to apply. Clean up with mineral spirits.
Latex	Seals joints around tub and shower; fills cracks in tile, plaster, glass, and plastic; fills nailholes.	Very easy to apply. Clean up with water.
Acrylic latex	Seals most dissimilar materials (wood, brick, concrete, plastic and glass).	Very easy to apply. Use outdoors only. Clean up with minera spirits.
Oil	Seals exterior seams and joints on building materials.	Easy to apply. Clean up with mineral spirits.

Applying the Caulk

Remove old caulk with a putty knife or screwdriver. Clean the surface with solvent to remove all traces of old caulk, oil, and dirt.

Cut the nozzle off the caulking cartridge at a 45-degree angle near its tapered tip and puncture

	Shrinkage	Adhesion	Remarks
	Little or no shrinkage. Lasts 20 years.	Good to excellent on most surfaces. Does not bond well to oily surfaces.	Remains flexible for life after curing. Permits joints to stretch or compress. Silicones will stick to painted surfaces, but paint will not adhere to cured silicone. Cost: High ($4 to $9 per tube).
	From 5 to 30 percent shrinkage. Lasts 4 to 10 years.	Good. Works well for brick and metal joints.	Less resilient than silicones. Allows for joint movement but does not become brittle with age. Can be painted after skin forms. Apply when temperature is above 40°F. Cost: High ($3 to $4 per tube).
	From 5 to 10 percent shrinkage. Lasts 3 to 10 years.	Good to excellent.	Easy to use. Seams can be trimmed or smoothed with moist finger or tool. Good water resistance when dry. Can be sanded and painted. Less elastic than above materials. Cost: Moderate ($2 to $3 per tube).
	From 5 to 10 percent shrinkage. Lasts 10 to 15 years.	Good to excellent.	Same as above.
	From 10 to 20 percent shrinkage. Lasts 1 to 5 years.	Good. May stain unpainted wood.	Readily available. Least expensive of the four types. Rope and tube form. Oils dry out and cause material to fall out. Cost: Low ($1 to $3 per tube).



the inner seal with a long nail or wire. Press the angled tip of the nozzle against the crack you want to fill and hold the gun at a 45-degree angle. Push the gun away from you while squeezing the trigger. This forces caulking deep into the crack. The crack should be filled to a depth equal to the width of the crack.

An optional method is to pull the gun toward you. This may be easier as it allows more control over the gun but it will not fill the cracks as well. When finished, place a nail in the end of the cartridge to keep the caulk fresh for the next use.

9. Stopping the Draft.

Weatherstripping should be used to form a seal around windows, doors, or wherever there is a movable joint.

Check for air leaks by feeling around the edges of the door or windows on a windy day or by moving a length of thread or a piece of plastic wrap around its sides. If the thread or plastic wrap moves, heat is being lost due to air infiltration.

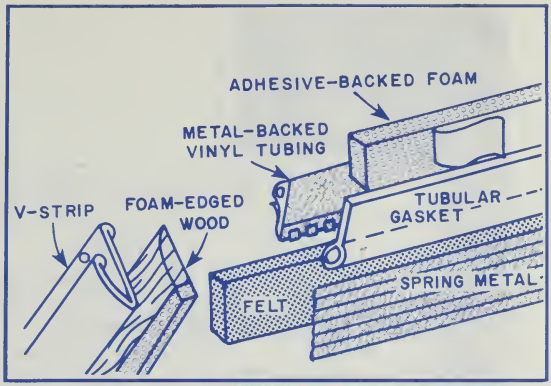
Ice or condensation building up on the inside of storm windows is another sign that weather-stripping is needed. This means that your inside window must be sealed.

Materials

There are a number of weatherstripping materials on the market. The following illustration shows a few of these. Foam-edged wood is usually used on doors, while the others are used on both windows and doors. Some are sold by the foot from a bulk dispenser. Others come prepackaged with nails or screws and include enough material to cover at least one window or door.

Rolled vinyl tubing (with or without metal backing)

and tubular gasket weatherstripping are generally installed outside where they won't be as evident. The tubular gasket often has a larger bulk than vinyl tubing and sometimes comes filled with foam. Both work well because they compress to form a tight seal when the door or window is closed.



Felt is installed in basically the same areas as a tubular gasket, although it is used indoors rather than outdoors to prevent deterioration.

Adhesive-backed foam should be used only in friction-free areas. On a double-hung window, for example, it could only be used on the bottom of the lower sash. If it were installed on the frame edges, it would probably loosen when the window was opened and closed.

Weatherstripping Doors and Windows

Any door between a heated and an unheated space should be weatherstripped. This includes entrance doors, basement doors, garage doors, and attic access doors.

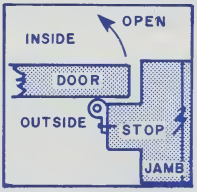
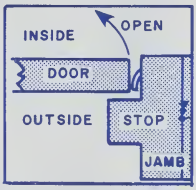
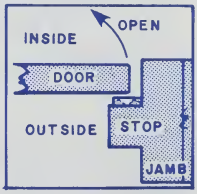
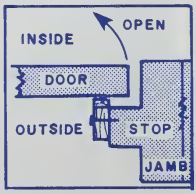
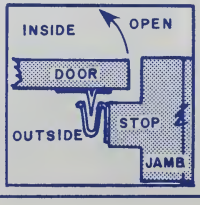
Doors should open and close with a slight resistance but without binding. No big gaps should be evident between the frame and the door. You may have to adjust the hinges, add shims (small pieces of wood), or sand or plane the edges to get doors to fit correctly.

Door Bottoms

A different, more durable weatherstripping is used for the bottom of the door than for the top and sides. Some types are:

Sweep—A sweep is the easiest type of weatherstrip to install. It is screwed to the bottom of the door—on the outside of doors that swing out, and the inside of

WEATHERSTRIPPING DOORS

	Type of Weatherstripping	Durability
	Vinyl tubing (with or without backing) and tubular gasket	Effective and durable.
	V-strip or spring metal	Extremely durable and effective.
	Adhesive-backed foam	Not very durable. May fall off after a year or two.
	Foam-edged wood and Felt	More durable than foam strip alone. Fairly durable.
	Interlocking metal channels	Extremely durable and tight-fitting seal.

Cost	Installation
$5 to $6 per door.	Tack or staple to the top and sides of the door stop. Vinyl should fit snugly.
$5 to $8 per door.	Nail to sides and top of door jamb with nailing flange against the door stop and the point of the "V" facing the door. Cut away sections that would cover hinges or the lock.
$2 to $3 per door.	Stick foam to inside face of door stop.
$3 to $5 per door. $1.50 per door.	Close door against stop. Press foam edge against door and nail wood to top and sides of door stop. Tack to top and sides of door stop as with foam rubber.
$8 to $10 per door.	Cut strips to fit and nail in place. Alignment is critical to achieve a good seal.

WEATHERSTRIPPING WINDOWS

	Type of Weatherstripping	Effectiveness/ Durability
	Spring metal and V-shaped seal	Very durable. Very durable.
	Adhesive-backed foam	Not durable. Lasts 1 to 2 years.
	Felt	May deteriorate. Don't use outside.
	Tubular gasket and Vinyl tubing (with or without metal backing)	Durable. Durable.

Cost	Installation
$3 to $6 per window.	Somewhat difficult to install. For double-hung windows, nail: •in the side channels •to the top of the upper sash •to the bottom of the lower sash •where the sashes meet. Awning and casement windows are treated like doors. Sliding windows can be treated as if they were double-hung windows on their sides.
$3 to $4 per window.	Easy to install. No nailing is required because of adhesive backing on seal. Install in the same areas as spring metal.
$1 to $3 per window.	Easy to install. Just peel away backing and stick to clean, dry surfaces. Use only in places where there is no friction. On a double-hung window, use on the underside of the bottom sash.
$1 to $2 per window.	Easy to install. •Tack to inside of window gap, frame or sash. •On double-hung window, tack a strip where upper and lower sashes meet. Use on sealing gaps that are narrow and of uniform width.
$2 to $3.50 per window. $3 to $5 per window.	Easy to install. On double-hung windows, nail the lip of gasket or tubing: •to the sides of the window frame •to the top and bottom of the sash •at the point where the two sashes meet.

GARAGE DOOR STRIP

GASKET THRESHOLD

TWO-PIECE DOOR SHOE

those that swing in. Most sweeps have slots for screws so you can adjust the sweep into position.

Garage door strip—This heavy plastic or rubber weatherstripping is easy to install and costs about $8 for each 16-foot overhead garage door. It will keep your garage warmer and prevent dirt, dust, and snow from blowing in under the door.

Gasket threshold—These replace existing thresholds or provide a threshold where there is none. Different heights are available. They seal well, although the gasket wears with continued use and eventually must be replaced.

Two-piece door shoe—This is a more protected gasket that slips over the bottom of the door and has a drip cap to prevent rain from entering the home. The door shoe can be used with any threshold that isn't channeled in the middle.

Windows, like doors, can effectively reduce infiltration of cold air if they are properly weatherstripped. Older, double-hung windows are notorious for creating cold drafts in a room. Weatherstripping the sash channels and top and bottom sash rails of such windows will make cold, drafty rooms much more comfortable.

HOUSEHOLD HEAT: FORGOTTEN PLACES WASTE ENERGY

Even if you have insulated your attic and walls and caulked and weatherstripped around doors and windows, gaps you may have overlooked will continue to steal heat from your house and money from your pocket.

Fortunately, many of these gaps can be closed

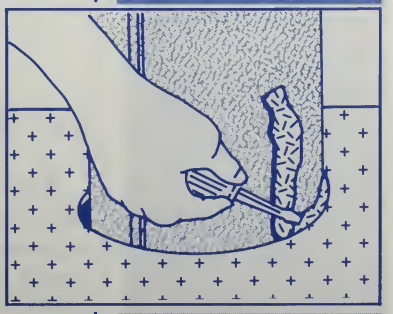
with only a little time and money and offer a substantial return. The following suggestions deal with four openings that are commonly ignored.

10. Escape Up the Chimney.

The first suggestion—closing the chimney damper when the fireplace is not being used—is a simple measure that will cost you nothing. An open damper creates a major air leak whenever the home is being heated. Clearly, this is a bad place to have a leak—the design of the chimney itself encourages a strong flow of heated air up and out of the house.

Keeping the damper closed when the fireplace is not in use can save up to $18 per year in electricity costs, $13 per year in gas heating costs, and $20 per year in oil heating costs. Of course, your actual savings will depend on the level at which you set the thermostat and the size of the damper opening.

11. Holes in the Attic Are Like Holes in Your Pocket.

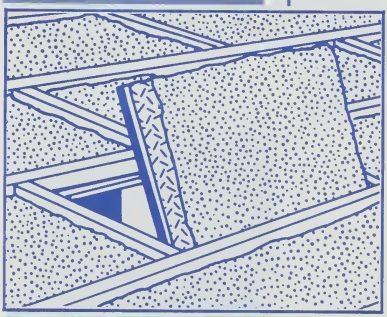


Step into your attic on a cold winter night. Even if it is insulated at floor level, you may be surprised to find the attic much warmer than the outside air. This means that some of the expensive heat you need downstairs has escaped up to the attic, where it won't do you a bit of good. Sizeable heat leaks are found not only in uninsulated attics, but also in insulated ones where gaps and holes have not been plugged.

Such leaks, or "bypasses," are avenues for heat loss during the winter and heat gain during the summer. It is common to

find large openings where pipes, ducts, or exhaust fans are cut through the attic floor. These openings can and should be stuffed with insulation. Stopping attic bypasses can save you from $12 to $40 a year in heating costs.

All the obvious holes and gaps, with the exception of the gaps around recessed light fixtures and the vents in the attic, can be plugged. **Do not cover light fixtures directly with insulation—this may cause a fire**. Also, the vents must be able to breathe so that they can prevent moisture from accumulating in the attic.



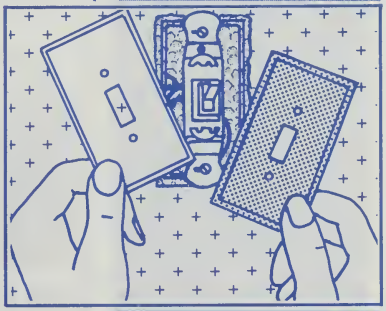
Another major attic bypass is the gap left between the furnace stack or chimney and the framing of the house. Plugging this gap is very important because it may act as a chimney in itself, pulling heated air all the way up from the basement and flooding it into the attic. **Fireproof** insulation can be stuffed between the wood frame and the wall of the chimney. **Do not use cellulose here**, as it may burn.

Another good candidate for insulation is the attic door. Unfortunately, many people forget to insulate the door after they have painstakingly applied insulation to the rest of the attic. The door should be covered with a batt of insulation, and the edges of the door weather-stripped so that air cannot escape around it. This measure alone can save you about $12 a year if you heat with electricity, $10 a year if you heat with natural gas, and $16 a year if you heat with home heating oil. It also will lower air conditioning costs.

12. More Holes in Your Pocket.

When people set out to caulk and weatherstrip their homes they generally focus their efforts on windows and doors. However, energy studies have shown that costly infiltration also comes through other places, such as through the baseboards,

through wall outlets, through holes where plumbing and telephone wires enter the house, through spaces around exhaust fans, through cracks around dryer vents, and through gaps around sink and bathtub drain pipes where they exit the house. All these gaps and holes should be caulked or stuffed with insulation. Electrical outlets can be sealed with inexpensive gaskets commonly available at hardware stores. To do so, turn off the switch supplying electrical current to the outlets, remove the plastic cover plates with a screwdriver, insert the gaskets, reattach the plates, and turn the current back on.



NOTE: It is important to note that even if you take all the actions suggested, your total savings will not necessarily equal the sum of the savings suggested for the individual actions. For example, wrapping a hot water tank with insulation and lowering the tank thermostat setting will not save you the sum of the savings projected for each of these individual actions.

The Department of Natural Resources and Conservation is not responsible and disclaims liability for any results or lack of results that may or may not accrue from the adoption of or failure to adopt any of the suggestions set forth in this brochure.

Much of the information within this brochure was drawn from the Minnesota Energy Agency's **Conservation Guide #5** and the U.S. Department of Energy's **Low-Cost, No-Cost Energy Savers Brochure**.

WHERE TO GO FOR INFORMATION AND ASSISTANCE

Utility Audits

Your local utility company can help in identifying ways to reduce energy consumption by conducting

an energy audit of your home. The audit will point out the areas in which your home is losing heat and, thus, wasting energy. You may also become eligible for a zero-interest loan to finance weatherization improvements, such as additional insulation or storm windows, identified in the audit.

Contact your local utility company directly for information on home energy audits and loan programs.

Home Weatherization Program

Low-income persons also may be eligible to receive help in weatherizing their homes. The Home Weatherization Program, offered through your local Human Resource Development Council (HRDC), will perform weatherization work on eligible households. An average of $500 is normally spent on each home.

Contact your local HRDC directly to see if you are eligible for the Home Weatherization Program.

Other Information Sources

Many sources of energy conservation information and assistance are available in your community. Your city or county library offers a wealth of information on all energy subjects. The Cooperative Extension Service office in your area can provide information on home energy conservation. Hardware stores and lumber suppliers can help explain the proper use and energy-saving potential of the many energy-saving products they sell.

Use the attached card to request additional information and literature on home energy conservation and other energy subjects from the Department of Natural Resources and Conservation.

Place
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Energy Division
Capitol Station
Helena, MT 59620

Montana Department of
Natural Resources and Conservation

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THE MONTANA ENERGY SAVING HANDBOOK FOR HOMEOWNERS

This comprehensive handbook will instruct you on how to insulate your home, maintain the heating system, perform heat-loss calculations, and take many other home energy-saving measures. Step-by-step, illustrated directions are included.

THE MONTANA RENEWABLE ENERGY HANDBOOK

This handbook gives a thorough introduction to renewable energy systems and their use in Montana. All forms of renewable energy are examined, their technologies are explained, and specific examples of the different forms are given.

THE MONTANA SUNPOWER SERIES

Volume I—Active Solar Homes

This book focuses on active solar space and hot water heating systems in Montana homes. It describes basic principles of active solar heating, details system design and construction, and presents owner comments and suggestions concerning system operation.

Volume II—Passive Solar Homes

This book is a sampling of cost-effective passive solar homes from across Montana. It divides the state into four geographic zones. Representative passive designs from each zone are discussed. Building materials, construction techniques, and system performance also are discussed, and owner comments and suggestions for improving performance are presented.

11 ENERGY SAVING LAWS

This booklet outlines procedures for claiming federal and state energy conservation tax credits, property tax exemptions, and gasohol license tax exemptions. It also explains how Montana residents can take advantage of energy-saving laws and programs.

The Energy Division of the Montana Department of Natural Resources and Conservation has published several booklets on home energy conservation and other energy subjects. Please check the publications you would like to receive:

- ☐ **The Montana Energy Saving Handbook for Homeowners**
- ☐ **The Montana Renewable Energy Handbook**
- **The Montana Sunpower Series**
  - ☐ **Volume I—Active Solar Homes**
  - ☐ **Volume II—Passive Solar Homes**
- ☐ **11 Energy Saving Laws**

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